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GLOSSARY

Acceptability – Adequate to satisfy a need, requirement, or standard. One of the USACE requirements for a project.

Aggradational Process of Plant Growth – Plant root material building elevation, usually in fresh marsh.

Air Quality Determination – The Louisiana Department of Environmental Quality ensures that projects do not adversely affect air quality through this determination as a requirement of the Clean Air Act.

Alternative Plan – A set of one of more management measures within a subprovince functioning together to address one or more objectives.

Amplitude – The maximum absolute value of a periodically varying quantity.

Anoxia – Absence of oxygen.

Anthropogenic – Caused by human activity.

Aquaculture – The science and business of farming marine or freshwater food fish or shellfish, such as oysters, crawfish, shrimp and trout, under controlled conditions.

Astronomical Tides – Daily tides controlled by the moon, as opposed to wind-generated tides.

Average Annual Habitat Unit (AAHU) – the total number of species/animals gained or lost as a result of a proposed action, divided by the life of that action.

Barbary Soils – Soils in swamps (with logs and stumps) that are level, very poorly drained, with a thin mucky surface layer and clayey underlying material.

Benefits – Valuation of positive performance measures.

Benthic – Living on or in sea, lake, or stream bottoms.

Biomass – The total mass of living matter (plant and animal) within a given unit of environmental area.

Bottomland Hardwood Forest – Low-lying forested wetlands found along streams and rivers.

Brackish Marsh (BRM) – Intertidal plant community typically found in the area of the estuary where salinity ranges between 4-15 ppt.

Chenier Plain – Western part of coastal Louisiana with little influence from Mississippi and Atchafalaya rivers.

Clean Water Act Section 404 (b) (1) – There are several sections of this Act which pertain to regulating impacts to wetlands. The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of this Act and specifically under Section 404 (Discharges of Dredge or Fill Material) of the Act.

Coastal Zone Consistency Determination – The U.S. Environmental Protection Agency reviews plans for activities in the coastal zone to ensure they are consistent with Federally approved State Coastal Management Programs under Section 307(c)(3)(B) of the Coastal Zone Management Act.

Coastwide Plan – Combination of alternative plans assembled to address an objective or set of objectives across the entire Louisiana Coast.

Collocated Team – A collection of scientists and professionals from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, NOAA Fisheries, Natural Resources Conservation Service, U.S. Geological Survey, U.S. Environmental Protection Agency, Louisiana Department of Natural Resources, and Louisiana Department of Wildlife and Fisheries that are located at the USACE-MVN office and work together on the LCA Plan.

Compaction of Holocene Deposits – Deltaic mud that packs down under its own weight.

Completeness – The ability of a plan to address all of the objectives. One of the USACE four requirements for a project.

Comprehensive Plan – Same as Coastwide Plan.

Connectivity – Property of ecosystems that allows for exchange of resources and organisms throughout the broader ecosystem.

Continental Shelf – The edge of the continent under gulf waters; the shallow Gulf of Mexico fringing the coast.

Control Structure – A gate, lock, or weir that controls the flow of water.

Crevasse – A breach or gap in the levee or embankment of a river (natural or manmade), through which floodwaters flow.

Cumulative Impacts – The combined effect of all direct and indirect impacts to a resource over time.

Datum – A point, line, or surface used as a reference, as in surveying, mapping, or geology.

Deciduous Forest – Forest composed mostly of trees that lose their leaves in the winter.

Decomposition – Breakdown or decay of organic materials.

Degradation Phase – The phase of the deltaic cycle when sediments are no longer delivered to a delta, and it experiences erosion, dieback, or breakup of marshes.

Deltaic Cycle – Capture of the Mississippi River by a distributary that offered a shorter route to the Gulf of Mexico. After abandonment of an older delta lobe, which would cut off the primary supply of fresh water and sediment, an area would undergo compaction, subsidence, and erosion. The old delta lobe would begin to retreat as the gulf advanced, forming lakes, bays, and sounds. Concurrently, a new delta lobe would begin its advance gulfward.

Deltaic Deposits – Mud and sand deposited at the mouth of a river.

Deltaic Plain – The land formed and reworked as the Mississippi River switched channels in the eastern part of the Louisiana coastal area.

Demersal – Dwelling at or near the bottom of a body of water (e.g., a *demersal fish*).

Detritus – The remains of plant material that has been destroyed or broken up.

Dewatering – The process of dredged sediments compacting while losing water after being deposited.

Discharge – The volume of fluid passing a point per unit of time, commonly expressed in cubic feet per second, millions of gallons per day, or gallons per minute.

Dissolved Oxygen – Oxygen dissolved in water, available for respiration by aquatic organisms. One of the most important indicators of the condition of a water body.

Direct Impacts – Those effects that result from the initial construction of a measure (e.g., marsh destroyed during the dredging of a canal). Contrast with “Indirect Impacts.”

Diurnal – Relating to or occurring in a 24-hour period; daily.

Diversion – A turning aside or alteration of the natural course or flow of water. In coastal restoration this usually consists of such actions as channeling water through a canal, pipe, or conduit to introduce water and water-borne resources into a receiving area.

Dynamic – Characterized by continuous change and activity.

Ecological – Refers to the relationship between living things and their environment.

Economic – Of or relating to the production, development, and management of material wealth, as of a country, household, or business enterprise.

Ecosystem – An organic community of plants and animals viewed within its physical environment (habitat); the ecosystem results from the interaction between soil, climate, vegetation and animal life.

Ecosystem Restoration – activities that seek to return a organic community of plants and animals and their habitat to a previously existing or improved natural condition or function.

Effectiveness – Having an intended or expected effect. One of the USACE four requirements for a project.

Efficiency – The quality of exhibiting a high ratio of output to input. One of the USACE four requirements for a project.

Egress – A path or opening for going out; an exit.

Electrical Conductivity – The ability of a medium to conduct electricity. Salt water has a higher electrical conductivity than fresh water, and this property allows the measurement of salinity through a simple meter.

Embankment – A linear mound of earth or stone existing or built to hold back water or to support a roadway.

Encroachment – Entering gradually into an area not previously occupied, such as a plant species distribution changing in response to environmental factors such as salinity.

Endangered Species – Animals and plants that are threatened with extinction.

Endpoints – see Objectives

Engineering News Record (ENR) – A magazine that provides news needed by anyone in or from the construction industry.

Enhance – To augment or increase/heighten the existing state of an area.

Entrenchment – Being firmly embedded.

Environmental Impact Statement (EIS) – A document that describes the positive and negative environmental effects of a proposed action and the possible alternatives to that action. The EIS is used by the Federal government and addresses social issues as well as environmental ones.

Estuary – A semi-enclosed body of water with freshwater input and a connection to the sea where fresh water and salt water mix.

Estuarine – Related to an estuary.

Evaporation – The process by which any substance is converted from a liquid state into, and carried off in, vapor; as, the evaporation of water.

Exotic Species – Animal and plant species not native to the area; usually undesirable (e.g., hyacinth, nutria, tallow tree, giant salvinia).

Faulting – A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are displaced relative to one another and parallel to the plane of fracture.

Feasibility Report – A description of a proposed action, previously outlined in a general fashion in a Reconnaissance Report, that will satisfy the Federal interest and address the problems and needs identified for an area. It must include an assessment of impacts to the environment (either in an Environmental Assessment, or the more robust Environmental Impact Statement), an analysis of alternative methods of completion, and the selection of a Recommended Plan through the use of a cost-effectiveness analysis.

Federal Principals Group (FPG) –A collaboration among Federal agencies at the Washington level to facilitate the flow of information, to provide guidance and recommendations to the USACE and LDNR throughout the study process, and to facilitate resolution of any interagency issues that may be identified in the conduct of the study.

Final Array – The final grouping of the most effective coastwide plans from which a final recommendation can be made.

Foreshore Dikes – An embankment of earth and rock built to prevent floods or erosion that is built in the area of a shore that lies between the average high tide mark and the average low tide mark.

Framework Development Team (FDT) – A group of professionals from various Federal and state agencies, academia and the public formed to provide a forum for individual members to discuss LCA Comprehensive Study activities and technical issues and to provide individual comments to the Senior Management Committee.

Fresh Marsh (FAM) – Intertidal herbaceous plant community typically found in that area of the estuary with salinity ranging from 0-3 ppt.

Furbearer – An animal whose skin is covered with fur, especially fur that is commercially valuable, such as muskrat, nutria, and mink.

Geomorphic – Related to the geological surface configuration.

Geosynclinal Down-warping – The downward bend or subsidence of the earth's crust, which allows of the gradual accumulation of sediment

Geotropically – Downward growth in response to gravity, as in plant roots.

Glycophytes – A plant that cannot live in high salinity environments, most plants.

Goals – Statements on what to accomplish and/or what is needed to address a problem without specific detail.

Gradient – A slope; a series of progressively increasing or decreasing differences in a system or organism.

Habitat – The place where an organism lives; part of physical environment in which a plant or animal lives.

Habitat Loss – The disappearance of places where target groups of organisms live. In coastal restoration, usually refers to the conversion of marsh or swamp to open water.

Hazardous, Toxic, and Radioactive Wastes (HTRW) – Projects features must be examined to ensure that their implementation will not result in excessive exposure to pollutants possibly located in the study area.

Headland – A point of land projecting into the sea or other expanse of water, still connected with the mainland.

Herbaceous – A plant with no persistent woody stem above ground.

Hydrodynamic – The continuous change or movement of water

Hydrology – The pattern of water movement on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Hypoxia – The condition of low dissolved oxygen concentrations.

Indemnification – Insurance against or compensation for loss or damage.

Indirect Impacts – Those effects that are not as a direct result of project construction, but occur as secondary impacts due to changes in the environment brought about by the construction. Contrast with “Direct Impacts.”

Infrastructure – The basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons.

Ingress – An entrance or the act of entering.

Inorganic – Not derived from living organisms; mineral; matter other than plant or animal.

Interdistributary Deposits – Sand and mud deposited between the river channels or between bayous.

Intermediate Marsh (INM) – Intertidal herbaceous plant community typically found in that area of the estuary with salinity ranging from 2-5 ppt.

Intertidal – Alternately flooded and exposed by tides.

Invertebrates – Animals without backbones, including shrimp, crabs, oysters, and worms.

Keystone Strategy – A strategy that other strategies rely upon for successful implementation.

Land-water Ratio – The relative proportion of wetlands and uplands to water in an area.

Larvae – The stage in some animal's life cycles between egg and adult (most invertebrates).

Leeward – Sheltered from the wind; away from the wind.

Levee – A linear mound of earth or stone built to prevent a river from overflowing; a long, broad, low ridge built by a stream on its flood plain along one or both banks of its channel in time of flood.

Loamy – Soil composed of a mixture of sand, clay, silt, and organic matter.

Locally Preferred Plan (LPP) – Alternative plan preferred by local sponsor if other than the Recommended Plan.

Maintain – To keep in existing state.

Measure – A programmatic restoration feature that can be assembled with other measures to produce alternative plans. See also "Project."

Methodology – A set of practices, procedures, and rules.

Mineral Substrate – Soil composed predominately of mineral rather than organic materials; less than 20 percent organic material.

Mudflats – Flat, unvegetated wetlands subject to periodic flooding and minor wave action.

Myatt Series – Gray terrace soil, with whitish, pebbly subsoil.

National Ecosystem Restoration (NER) – USACE standard for cost-effectiveness based on ecosystem, not economic, benefits.

Near-shore Currents – Movement of water parallel to the shoreline. Usually generated by waves breaking on the shore at an angle other than perpendicular.

National Environmental Policy Act (NEPA) – Ensures that Federal agencies consider the environmental impacts of their actions and decisions. NEPA requires all Federal agencies to consider the values of environmental preservation for all significant actions and prescribes procedural measures to ensure that those values are fully respected.

Net Gain – The amount of cumulative land gain less land loss, when gain is greater than loss.

Net Loss – The amount of cumulative land gain less land loss, when gain is less than loss.

No Action Alternative – The alternative in the LCA Plan which describes the ecosystem of the coastal area if no restoration efforts/projects were done.

Nursery – A place for larval or juvenile animals to live, eat, and grow.

Objectives – More specific statements than “Goals,” describing how to achieve the desired targets.

Oceanic-dumping – The discharge of wastes or pollutants into offshore waters.

Organic – Composed of or derived from living things.

Oscillations – Fluctuations back and forth, or up and down.

Oxidation of Organic Matter – The decomposition (rotting, breaking down) of plant material through exposure to oxygen.

Oxygen-depleted – Situation of low oxygen concentrations where living organisms are stressed.

Petrochemical – Any compound derived from petroleum or natural gas.

Point-Bar Deposit – The shallow depositional area on the inside bank of a river bend.

Post-larval – Stage in an animal’s lifecycle after metamorphosis from the larval stage, but not yet full grown.

Potable Water – Water that is fit to drink.

ppt – parts per thousand. The salinity of ocean water is approximately 35 ppt.

Primary Consolidation/Secondary Compression – Two processes acting on a substrate that has a load applied to it to cause the sediment to increase in density, and decrease in volume.

Prime Farmland - Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. One of the categories of concern in the EIS.

Principles – Framing statements that can be used to evaluate alternatives while considering issues that affect them. Used along with targets and assessments of ecosystem needs to provide guidance in formulation of alternative plans.

Productivity – Growth of plants and animals.

Progradation – The phase during the deltaic cycle where land is being actively accreted through deposition of river sediments near the mouth.

Programmatic Environmental Impact Statement (PEIS) – and Environmental Impact Statement that supports a broad authorization for action, contingent on more specific detailing of impacts from specific measures.

Project – A constructible increment of an alternative plan.

Project Implementation Report (PIR) – A project-specific follow-up report that expands on the information contained in a Programmatic Feasibility Report to ensure NEPA compliance, such as conducting public meetings, preparing the appropriate environmental documentation, and preparing the engineering designs as specifications necessary to build the project.

Province – A major division of the coastal zone of Louisiana. (e.g., Deltaic Plain and Chenier Plain).

Pulsing – Letting a diversion flow periodically at a high rate for a short time, rather than continuously.

Quantitative – Able to assign a specific number; susceptible to measurement.

Radiocarbon Age Determination –The use of the ratio of carbon isotopes to determine age.

Rebuild – To some extent build back a structure/landform that had once existed.

Reconnaissance Report – A document prepared as part of a major authorization that examines a problem or need and determines if sufficient methods and Federal interest exists to address the problem/need . If so, then a “Feasibility Report” is prepared, which details the solution and its impacts further.

Reduce – To diminish the rate or speed of a process.

Regional Working Group (RWG) – An inter-agency team formed to support the Washington-level Federal Principal's Group and to facilitate regional level collaboration and coordination on the LCA study.

Rehabilitate – To focus on historical or pre-existing ecosystems as models or references while emphasizing the reparation of ecosystem processes, productivity and service.

Relative Sea Level Change – The sum of the sinking of the land (subsidence) and eustatic sea level change; the change in average water level with respect to the surface.

Restore – Return a wetland to an approximation of its condition or function prior to disturbance by modifying conditions responsible for the loss or change; re-establish the function and structure of that ecosystem.

Sangamonian Interglacial Period – the last interglacial period before the Holocene period (the current geological period).

Saline Marsh (SAW) – Intertidal herbaceous plant community typically found in that area of the estuary with salinity ranging from 12-32 ppt.

Salinity – The concentration of dissolved salts in a body of water, commonly expressed as parts per thousand.

Salt Marshes – See “Saline Marsh.”

Scoping – Soliciting and receiving public input to determine issues, resources, impacts, and alternatives to be addressed in the draft EIS.

Sea level – Long-term average position of the sea surface.

Sediment Plume – Caused by sediment rich rainwater runoff entering the ocean. The runoff creates a visible pattern of brown water that is rich in nutrients and suspended sediments that forms a kind of cloud in the water spreading out from the coastline. Commonly forms at river and stream mouths, near sloughs, and along coasts where a large amount of rain runoff flows directly into the ocean.

Sheet Flow – Flow of water, sediment, and nutrients across a flooded wetland surface, as opposed to through channels.

Shoaling – The shallowing of an open-water area through deposition of sediments.

Slikensides – The smooth or partially polished surface of rock caused by one rock mass sliding over another in a fault plane.

Social – Relating to human society and its modes of organization.

Socioeconomic – Involving both social and economic factors.

Dredged Material Banks, Side-cast Banks, Excavated Material Banks – Dredged material removed from canals and piled in a linear mound along the edge of canals.

Stabilize – To fix the level or fluctuation of; to make stable.

State Historic Preservation Office (SHPO) – The part of the Louisiana Department of Culture, Recreation, and Tourism that deals with Indian sites and other archaeological remains.

Stillstand – A period of time when sea level did not change.

Storm Overwash – The process by which sand is transposed landward over the dunes during a storm event by waves.

Storm Surge – An abnormal and sudden rise of the sea along a shore as a result of the winds of a storm.

Stough soils – Yellowish brown coarse-loamy soil.

Strategy – Ecosystem restoration concept from the Coast 2050 Plan.

Stream Gaging Data – Records of water levels in streams and rivers.

Submergence – Going under water.

Subprovince – The divisions of the two Provinces (see “Province”) into smaller groupings: 1) east of the Mississippi River; 2) west of the Mississippi River to Bayou Lafourche; 3) Bayou Lafourche to Freshwater Bayou; 4) Freshwater Bayou to Sabine River.

Subsidence – The gradual downward settling or sinking of the Earth’s surface with little or no horizontal motion.

Sustain – To support and provide with nourishment to keep in existence; maintain.

Tarbert Flow – Stream gage data recorded at Tarbert’s Landing on the Mississippi River.

Target – Resulting ecosystem and landscape changes that would be expected over the next 50 years.

Terrestrial Habitat – Land areas that are not wetlands.

Third Delta – A proposed project that would divert up to 120,000 cubic feet of water per second from the Mississippi River near Donaldsonville, Louisiana down a conveyance channel to the marshes in southern Barataria and Terrebonne Basins.

Toxicity – The measure of how poisonous something is.

Transpiration – The process by which water passes through living plants into the atmosphere.

Trenasse – A small manmade trench through a swamp or marsh.

Turbidity – The level of suspended sediments in water; opposite of clarity or clearness.

Unique Farmland – Land other than Prime Farmland (see “Prime Farmland”) that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits, and vegetables.

Upconing – The tendency of underground salt water to move closer to the surface in the vicinity of a well by drawing fresh ground water out.

Upland (UPL) – A general term for non-wetland elevated land above low areas along streams or between hills.

Water Resource Units (WRU) – An accounting of numbers and values of structures, as well as the quantity and value of agricultural land, in and area.

Water Resources Development Act (WRDA) – A bill passed by Congress that provides authorization and/or appropriation for projects related to the conservation and development of water and related resources.

Weir – A dam placed across a canal or river to raise, divert, regulate or measure the flow of water.

ACRONYMS

AAHU – Average Annual Habitat Unit
ACHP – Advisory Council on Historic Preservation
ACM – Articulated Concrete Mat Revetment
ARS – Local Rate of Subsidence
ASA (CW) – Assistant Secretary of the Army (for Civil Works)
BAT – Best Available Technology Economically Achievable
BCT – Best Conventional Pollutant Control Technology
BMP – Best Management Practices
BPD – Barrels Per Day
BRM – Brackish Marsh
BTNEP – Barataria-Terrebonne National Estuary Program
BTU – British Thermal Units
BU – Benefits Units
CDP – Census Designated Places
CE/IC – Cost Effectiveness and Incremental Cost
CE/ICA – Cost Effectiveness and Incremental Cost Analysis
CELSS – Coastal Ecological Landscape Spatial Simulation
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CFR – Code of Federal Regulations
CFS – Cubic Foot Per Second
COM – Compaction Fraction
CP – Conceptual Plan
CRT – Coastal Restoration Team
CSVr – Contents-T0-Structure Value Ratio
CWA – Clean Water Act
CWPPRA – Coastal Wetland Planning, Protection Restoration Act
CY – Calendar Year
CYR – Cubic Yards Per Year
D – Water Depth
dbl – decibels
DEQ – Department of Environmental Quality
DM – Decision Makers
DO – Dissolved Oxygen
E&D – Engineering and Design
EIS – Environmental Impact Statement
EMAP – Environmental Monitoring and Assessment Program
ENR – Engineering News Record
EP – Engineering Pamphlet
FAM – Fresh Marsh
FDES – Flood Damage Estimation System
FDT – Framework Development Team
FEMA – Department of Homeland Defense Federal Emergency Management Agency
FPG – Federal Principals Group

FCSA – Feasibility Cost Share Agreement
FTL – Functional Team Leader
FWA – Future With The Alternative
FWO – Future Without Project
FY – Fiscal Year
GIWW – Gulf Intracoastal Waterway
GIS – Geographic Information System
H&H – Hydrology and Hydraulics
HIS – Habitat Suitability Index
HSIQL – Habitat Suitability Index That Reflects Quality of Habitat
HTRW – Hazardous, Toxic, or Radioactive Waste
HQU – Habitat Quality Units
HQUSACE – Headquarters, United States Army Corps of Engineers
HUD – Housing and Urban Development
IHNC – Inner Harbor Navigation Canal
INM – Intermediate Marsh
INT – Interspersion
IPT – Interdisciplinary Planning Team
ITR – Independent Technical Review
IWR – Institute for Water Resources
LABR – Lower Atchafalaya Basin Reevaluation
LAR – See LABR
LCA – Louisiana Coastal Area
LDNR – Louisiana Department of Natural Resources
LDWF – Louisiana Department of Wildlife and Fisheries
LERRD – Land, Easements, Rights of Way, Relocation, and Disposal
LNG – Liquefied Natural Gas
LPDES – Louisiana Pollution Discharge Elimination System
LPMS – Lock Performance Management System
LPP – Locally Preferred Plan
LSU – Louisiana State University
MCACES – Microcomputer Aided Cost Estimating System
MCFS – Marsh Creation Feasibility Study
MR&T – Mississippi River and Tributaries
MRC – Mississippi River Commission
MRGO – Mississippi River Gulf Outlet
MS4s – Municipal Separate Storm Sewer Systems
MVD – Mississippi Valley Division
MVN – Mississippi Valley New Orleans District
NE – Northeast
NED – National Economic Development
NEPA – National Environmental Policy Act
NER – National Ecosystem Restoration
NG – Natural Gas
NGVD – National Geodetic Vertical Datum
NHPA – National Historic Preservation Act

NMFS – Department of Commerce National Marine Fisheries Service
NOAA – National Oceanic and Atmospheric Administration
NPDES – National Pollutant Discharge Elimination System
NRC – National Research Council
NRCS – Department of Agriculture Natural Resources Conservation Service
NRHP – National Register of Historic Places
NTRC – National Technical Review Committee
NW – North West
NWR – National Wildlife Refuge
OMRR&R – Operating, Maintaining, Repairing, Replacing, and Rehabilitating
OSI – Overall Suitability Index
O&M – Operations and Maintenance
OPEC – Organization of Petroleum Exporting Countries
P&G – Principles & Guidelines
PCA – Project Cost Agreement
PDT – Project Delivery Team
PED – Preconstruction, Engineering, and Design
PEIS – Programmatic Environmental Impact Statement
PIERS – Port Import Export Reporting Service
PIR – Project Implementation Report
PMT – Project Management Team
PPM – Parts Per Million
Q – Discharge
RET – Retention Fraction
RR – Railroad
RSLR – Relative Sea Level Rise
RV – Recreational Vehicle
RWG – Regional Work Group
S&A – Supervision and Administration
SAW – Saline Marsh
SELA – Southeast Louisiana
SHPO – State Historic Preservation Officer
SL – Sediment Load
SLU – Southern Louisiana University
SPR – Strategic Petroleum Reserve
SS – Scrub Shrub
SUB – Local Subsidence Amount
SW – Southwest
SWF – Swamp
SWPPP – Storm Water Pollution Prevention Plan
TMDL – Total Maximum Daily Limit
TSP – Tentatively Selected Plan
TVA – Tennessee Valley Authority
ULL – University of Louisiana at Lafayette
UNO – University of New Orleans
UPL – Upland

USACE – United States Army Corps of Engineers
USACE-MVN – United States Army Corps of Engineers – Mississippi Valley New Orleans District
USACE-OVEST – United States Army Corps of Engineers Office of the Chief of Engineers Value Engineering Study Team
USEPA – United States Environmental Protection Agency
USFDA – United States Food and Drug Administration
USFWS – U.S. Fish and Wildlife Service
USGS – United States Geological Survey
VE/ITR – Value Engineering/ Independent Technical Review
VT – Vertical Team
WAT – Water
WCSC – Waterborne Commerce Statistics Center
WEFA – Wharton Economic Forecasting Associates
WLO – Wax Lake Outlet
WLO – Wax Lake Outlet
WRDA – Water Resource Development Act
WRU -- Water Resource Units
WRU – Water Resource Units
WW – Waterway

CONVERSIONS

METRIC SYSTEM ¹					
LENGTH					
<i>Unit</i>	<i>Abbreviation</i>	<i>Number of Meters</i>	<i>Approximate U.S. Equivalent</i>		
kilometer	km	1,000	0.62 mile		
hectometer	hm	100	328.08 feet		
dekameter	dam	10	32.81 feet		
meter	m	1	39.37 inches		
decimeter	dm	0.1	3.94 inches		
centimeter	cm	0.01	0.39 inch		
millimeter	mm	0.001	0.039 inch		
micrometer	μm	0.000001	0.000039 inch		
AREA					
<i>Unit</i>	<i>Abbreviation</i>	<i>Number of Square Meters</i>	<i>Approximate U.S. Equivalent</i>		
square kilometer	sq km <i>or</i> km ²	1,000,000	0.3861 square miles		
hectare	ha	10,000	2.47 acres		
are	a	100	119.60 square yards		
square centimeter	sq cm <i>or</i> cm ²	0.0001	0.155 square inch		
VOLUME					
<i>Unit</i>	<i>Abbreviation</i>	<i>Number of Cubic Meters</i>	<i>Approximate U.S. Equivalent</i>		
cubic meter	m ³	1	1.307 cubic yards		
cubic decimeter	dm ³	0.001	61.023 cubic inches		
cubic centimeter	cu cm <i>or</i> cm ³ <i>also</i> cc	0.000001	0.061 cubic inch		
CAPACITY					
<i>Unit</i>	<i>Abbreviation</i>	<i>Number of Liters</i>	<i>Approximate U.S. Equivalent</i>		
			<i>cubic</i>	<i>dry</i>	<i>liquid</i>
kiloliter	kl	1,000	1.31 cubic yards		
hectoliter	hl	100	3.53 cubic feet	2.84 bushels	
dekaliter	dal	10	0.35 cubic foot	1.14 pecks	2.64 gallons
liter	l	1	61.02 cubic inches	0.908 quart	1.057 quarts
cubic decimeter	dm ³	1	61.02 cubic inches	0.908 quart	1.057 quarts
deciliter	dl	0.10	6.1 cubic inches	0.18 pint	0.21 pint
centiliter	cl	0.01	0.61 cubic inch		0.338 fluid ounce
milliliter	ml	0.001	0.061 cubic inch		0.27 fluid dram

microliter	μl	0.000001	0.000061 cubic inch		0.00027 fluid dram
MASS AND WEIGHT					
<i>Unit</i>	<i>Abbreviation</i>	<i>Number of Grams</i>	<i>Approximate U.S. Equivalent</i>		
metric ton	t	1,000,000	1.102 short tons		
kilogram	kg	1,000	2.2046 pounds		
hectogram	hg	100	3.527 ounces		
dekagram	dag	10	0.353 ounce		
gram	g	1	0.035 ounce		
decigram	dg	0.10	1.543 grains		
centigram	cg	0.01	0.154 grain		
milligram	mg	0.001	0.015 grain		
microgram	μg	0.000001	0.000015 grain		

Attachment 1

Relevant Authorizations for Coastal Restoration Efforts

1. Caernarvon Freshwater Diversion project (authorized by the Flood Control Act of 1965 (PL 89-298), the WRDA of 1974 (PL 93-251), and WRDA 1986 (PL 99-622)).
2. Davis Pond Freshwater Diversion project (authorized by the Flood Control Act of 1928 (PL 70-391) and the Flood Control Act of 1965 (PL 89-298); the project was further amended by WRDA 1986 (PL 99-622) and WRDA 1996 (PL 104-303)).
3. Section 103 of the 1962 River and Harbor Act - Hurricane and Storm Damage Reduction. Section 103 of the 1962 River and Harbor Act provides authority for the USACE to develop and construct projects to protect the shores of publicly owned property by constructing revetments, groins, and jetties, to include periodic sand replenishment. Each project is limited to a Federal cost of not more than \$3 million.
4. Section 1135 of WRDA 1986 - Project Modifications for Improvement to the Environment. Section 1135 of the 1986 WRDA provides authority to restore degraded ecosystems, if the construction or operation of a USACE project contributes to the degradation of the quality of the environment. Measures for restoration through modifications of the structure or operation of the structure can be undertaken. Measures at other locations affected by the construction or operation of the project can also be undertaken if they do not conflict with the authorized project purposes.
5. The Coastal Wetland Planning, Protection and Restoration Act (PL-101-646, Title III), (CWPPRA), enacted in November 1990, provided the first Federal statutory mandate for restoration of Louisiana's coastal wetlands.
6. The Barataria-Terrebonne National Estuary Program (BTNEP) was established in 1990 under the U.S. Environmental Protection Agency's (USEPA) National Estuary Program. BTNEP established a partnership between the USEPA and the State of Louisiana to study natural and man-made causes of environmental degradation in the Barataria-Terrebonne watershed and to protect the watershed from further degradation.
7. Section 204 of the 1992 WRDA - Ecosystem Restoration Projects in Connection with Dredging. Section 204 of the 1992 WRDA provides authority for the USACE to restore, protect, and create aquatic and wetland habitats in connection with construction or maintenance dredging of an authorized project.
8. Section 206, 1996 WRDA - Aquatic Ecosystems. Section 206, of the 1996 WRDA provides authority for the USACE to restore degraded ecosystems. This authority is similar to Section 1135, but a USACE project need not be a contributor to the degradation of the quality of the environment.

Attachment 2

Prior Studies, Reports, and Existing Water Projects

Additional information regarding restoration actions with respect to the LCA study authority can be found in the section 1 INTRODUCTION (found on page MR-14).

A number of studies and reports on water resources development in the study area have been prepared by the USACE, other Federal, state, and local agencies, research institutes, and individuals. Previous studies established an extensive database for this study. Historical trends and existing conditions were identified to provide insight into future conditions, help isolate the problems, and identify the most critical areas. Those projects not fully described in section 1 are summarized here.

The more relevant studies, reports, and projects are described as follows:

1. In November 1993, The Louisiana Coastal Wetlands Restoration Plan was prepared, by the Louisiana Coastal Wetlands Conservation and Restoration Task Force as part of the Federal Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) established in 1990 (Public Law 101-646, title III). This plan is a product of communication, coordination, and cooperation among the designated participants from the state and Federal agencies, and through formal and informal involvement of numerous local government agencies, the academic community, private environmental and business groups, and countless motivated individuals. There are two important findings that form the core of the Restoration Plan.

1. First, by phasing in an adequate investment now, it is technically feasible to significantly slow or reverse coastal wetlands loss and thereby protect, sustain, and increase the most valuable environmental and economic assets of the region.
2. Second, the no-action alternative condemns the Nation to a far more expensive course of uncoordinated and increasingly futile emergency efforts to protect existing investments in the economic infrastructure without hope of achieving sustainability.

Under the authority of CWPPRA, the Task Force has actively pursued its mission, fulfilling a second CWPPRA directive of submitting a series of annual Priority Project Lists. CWPPRA projects include gulf and inland shoreline protection, sediment and freshwater diversions, terracing, vegetative plantings, marsh creation, and barrier island projects.

2. In 1994, the Governor's Office of Coastal Activities Science Advisory Panel prepared a plan entitled An Environmental –Economic Blueprint for Restoring the Louisiana Coastal Zone: The State Plan for the Wetlands Conservation and Restoration Authority (State Wetlands Authority), constituted under Act 6 (R.S. 49:213.1 et seq.). At about the same time, other plans were developed, as the need for action became widely apparent.

3. In April 1995, a report was presented entitled A White Paper-The State of Louisiana's Policy for Coastal Restoration Activities. This White Paper represents the State of Louisiana's appraisal of the present conditions and the ongoing challenges in the restoration and protection efforts of our state's coastline. Equally important, this paper outlines strategies for a 20-year coastal restoration plan based on a partner-supported, unified plan of action. In this paper, the State calls upon its partners: the USACE, the U.S. Departments of Agriculture, Commerce, and Interior, and the U.S. Environmental Protection Agency, along with other Federal, state/local agencies, user groups, concerned citizens, and private interests to support and endorse the strategies outlined there in. The paper presents the State's desire to improve coordination with all local governments and Federal agencies, as well as our Congressional delegation.
4. The December 1998 report Coast 2050: Toward a Sustainable Coastal Louisiana presents a coast wide plan developed through a joint effort of the CWPPRA Task Force and the State Wetlands Authority. The Coast 2050 plan was subsequently adopted by the State Wetlands Authority as their official plan. The plan combines elements of all previous efforts, along with new initiatives from private citizens, local governments, state and Federal agency personnel, and the scientific community. The plan integrates coastal management and coastal restoration approaches, and adopts a multiple-use approach to restoration planning. Among other contributions, the Coast 2050 Plan provides new quantitative techniques for projecting land loss patterns into the future, a coast wide assessment of subsidence rates and patterns, and a comprehensive consideration of changes in fish and wildlife populations. The Coast 2050 plan establishes regional and coast wide common strategies and programmatic recommendations. The coast wide strategies were updated in January 2001 and include beneficial use of dredged material and dedicated dredging to create, restore, or protect wetlands; herbivory control; stabilization of the width and depth of major navigation channels and other water bodies at their point of intersection; maintenance of gulf, bay, and lake shoreline integrity; management of pump and gravity-flow outfall for wetland benefits; vegetative planting; maintaining, protecting, or restoring coastal ridge function; terracing; off-shore and riverine sand and sediment resources; diversions and riverine discharge; and management of diversion outfall for wetland benefits. Programmatic recommendations include: coordinate wetland mitigation, provide appropriate relocations costs and flood control for impacts related to wetland restoration, expedite coastal restoration permitting, impose and enforce boat wake limits, implement measures to improve wetlands and aquatic habitats, improve land rights acquisition procedures, increase wetlands through incentive based programs, identify funding sources to adequately address coastal land loss problems in Louisiana, prevent negative effects of shell dredging, mitigate water hyacinth problems, minimize losses due to permitted activities, develop and sustain a comprehensive barrier shore/island initiative, and provide for better coordination among agencies regarding coastal issues.
5. In May 1999, a report entitled Section 905(b) (WRDA1986) Analysis Louisiana Coastal Area, Louisiana --Ecosystem Restoration was prepared by USACE. This reconnaissance level effort evaluated the Coast 2050 Plan as a whole and expressed a Federal interest in proceeding to the feasibility phase.

Previous partial responses to the Louisiana Coastal Area Study Authorization of 1967 that have been completed at the present time are summarized as follows:

6. In 1984, a feasibility report entitled Mississippi and Louisiana Estuarine Areas was prepared by USACE. The report recommended the diversion of Mississippi River water into the Lake Pontchartrain Basin and Mississippi Sound to increase habitat conditions and improve fish and wildlife resources. The project was authorized by the Water Resources Development Act of 1988.
7. In September 1984, an initial evaluation study entitled Louisiana Coastal Area Louisiana, Shore and Barrier Island Erosion reports investigative findings which indicate that Louisiana's beaches and barrier islands act as buffers for coastal marshes and communities, absorbing much of the wave action from the Gulf of Mexico. The problems addressed in this study concerns shoreline and barrier island erosion caused by both man-induced and natural forces. The study identified that increased wave energy and altered water circulation would increase turbidity and salinity, replacing the highly productive estuarine environment with a less productive marine environment.
8. In June 1990, the USACE conducted a reconnaissance study under the Louisiana Coastal Authority entitled Mississippi River Delta Study. The purpose of this study was to determine the feasibility of realigning the lower Mississippi River channel to increase its marsh-building capacity. The general study finding was that there are no economically justified alternatives for making realignments to the Mississippi River.
9. In September 1984, an initial evaluation report Louisiana Coastal Area, Louisiana, Water Supply was prepared by USACE which investigated the advisability of improvements or modification of existing improvements, in the interest of water supply, in the coastal area of Louisiana. The report recommended that five of the six problem areas identified be further investigated in the cost-shared feasibility phase of the study.
10. In March 1989, the reconnaissance report Louisiana Coastal Area, Hurricane Protection investigated hurricane induced storm surges associated with anticipated future losses of coastal wetlands and barrier islands in Louisiana. The USACE prepared a report, certified in March 1989, recommending that the study proceed into the cost shared feasibility phase.
11. In April 1990, a report entitled Land Loss and Marsh Creation, St. Bernard, Plaquemines, and Jefferson Parishes, Louisiana was published by USACE under the LCA Authority. The report presents the findings of feasibility phase investigations for utilizing Mississippi River water and sediment through diversions and direct placement to address the loss of vegetated wetlands in coastal Louisiana.

Other pertinent studies, reports, and projects not prepared under the LCA Study authority are as follows:

There are numerous existing projects within the study area that have been created under various congressional authorizations. These projects include navigation related projects under the Rivers and Harbors Act, Mississippi River & Tributary Project (Flood Control Act 1928) and hurricane protection/ flood controls (Flood Control Act of 1965).

12. In 1942, a report entitled Louisiana-Texas Intracoastal Waterway, New Orleans, Louisiana to Corpus Christi, Texas was published as House Document No. 230, 76th Congress, 1st Session. The report and prior River and Harbor Acts provide for the construction of a 384.1-mile channel 12 ft deep by 125 ft wide from the mouth of the Rigolets to the Sabine River. The project was authorized for construction by the River and Harbor Act of 23 July 1942. The main stem of the project was completed in 1944.
13. In 1945, a report entitled Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana was published as House Document 215, 76th Congress, 1st Session. The report recommended a navigation channel 35 ft to 40 ft deep by 800 ft to 1,000 ft wide. Construction of the channel was completed in 1963. The General Design Memorandum Supplement No. 2, dated April 1984, provides for the restoration of deteriorated bank lines below Venice, Louisiana, and along Southwest Pass with rock foreshore dikes and hydraulic fill to reduce shoaling.
14. In 1958, a report entitled Barataria Bay, Louisiana was published as House Document No. 82, 85th Congress, 1st Session. The project provides for a 12- by 125-ft navigation channel approximately 37.0 miles long beginning at the GIWW and extending to Grand Isle, Louisiana. These improvements were authorized by the River and Harbor Act of 3 July 1958. All work was completed in December 1967.
15. In 1962, a USACE report entitled New Orleans to Venice, Louisiana Hurricane Protection was published as House Document 550, 87th Congress, 2nd Session. The project provides hurricane protection to developed areas in Plaquemines Parish along the Mississippi River. The locally constructed back levee from City Price to Venice, Louisiana, on the west bank would be brought up to grade. The General Design Memorandum Supplement No. 5, dated October 1983, provides for the creation of 297 acres of marsh in the Delta-Breton National Wildlife Refuge as mitigation for marsh loss caused by the levees. Construction is approximately 80 percent complete with estimated completion in 2017.
16. In 1964, a report on the Mississippi River and Tributaries project, published as House Document No. 308, 88th Congress, 1st Session, recommended construction of the Mississippi Delta Region project. The project provided for four salinity control structures to introduce freshwater into the delta region. These improvements were authorized by the Flood Control Act of 1965.

17. In 1965, the Lake Pontchartrain, LA, and Vicinity Hurricane Protection Project (LP&V-HPP) was authorized by the Flood Control Act of 1965; additional authorization was given through the Water Resources Development Acts of 1974, 1986, 1990, and 1992. The project provides for hurricane protection for the metropolitan New Orleans area by constructing hurricane protection levees and appurtenant features. Construction was initiated in 1967 and is ongoing with over-all project completion scheduled for 2013.
18. In 1965, the Larose to Golden Meadow Hurricane Protection Project was authorized by Flood Control Act of 1965, House Document 184, 89th Congress, Public Law 89-298. The Larose to Golden Meadow Project is located along Bayou Lafourche in south Louisiana. It consists of a 43-mile ring levee that provides hurricane protection and approximately 8 miles of low interior levees that regulate intercepted drainage for lands on both banks of the bayou from Larose south to Golden Meadow. There are two floodgates, one at the upper bayou crossing and another at the lower bayou crossing, that maintain navigation in Bayou Lafourche. The first levee lift was completed in 1975. The final levee lift to the 100-year elevation is scheduled for completion in 2003.
19. In 1973, an eighteen report series, Hydrologic and Geologic Studies of Coastal Louisiana, and the final report entitled Environmental Atlas and Multi-Use Management Plan for South-Central Louisiana were prepared by the Center for Wetland Resources, Louisiana State University under a contract with USACE. The studies examined and identified trends in the coastal area resulting from natural processes and human activities, identified significant environmental parameters, determined the fresh water required to implement changes for fish and wildlife enhancement, and developed management and structural approaches to problem-solving in the estuarine environment.
20. In 1979, a report sponsored by the USFWS entitled An Ecological Characterization Study of the Chenier Plain Coastal Ecosystem of Louisiana and Texas was published. This report contains information on the biological, physical, and social parameters in the Chenier Plain of Louisiana and Texas.
21. In 1980, the USFWS produced a report entitled Mississippi Deltaic Plain Region Ecological Characterization. The report supplies information about the biological, physical, and social parameters in the Mississippi Deltaic Plain region of Louisiana. Portions of the USFWS report were used in the present study.
22. In June 1980, the Grand Isle and Vicinity, Louisiana, Phase II General Design Memorandum was issued by USACE. The report contains detailed studies of a combined beach erosion and hurricane protection plan for the shore of Grand Isle. Design features include beach fill, vegetated dunes, and a jetty
23. In 1981, a report entitled New Orleans-Baton Rouge Metropolitan Area, Louisiana was completed by USACE. The report contains a comprehensive plan for development and conservation of water and related land resources in a 21-parish area. The report includes 10 parishes in the current study.

24. In 1981, a report entitled Deep-Draft Access to the Ports of New Orleans and Baton Rouge, Louisiana was prepared by USACE. The report recommended deepening the Mississippi River to a project depth of 55 ft from the Gulf of Mexico to the Ports of New Orleans and Baton Rouge. Dredged material would be placed in subsiding areas east and west of the river below Venice to create 11,600 acres of marsh over a 50-yr period. The project was authorized by the 1985 Supplemental Appropriations Act of 1986, dated 17 November 1986. Construction of Phase I of the project, a 45-ft channel to mile 181 Above Head of Passes, was completed in December 1988.
25. In June 1982, a report entitled Louisiana's Eroding Coastline: Recommendations for Protection was published by Coastal Environments, Inc., through a contract with LDNR. The report recognizes that future losses of coastal wetlands are unavoidable and will require either retreat of development from the coastal zone of increasingly greater levels of protection. Areas with erosion problems were identified and ranked according to severity. The report recommends a number of pilot projects using water and sediment diversions, dredged material placement, and planted vegetation as ways to reduce erosion. A study to determine future coastal conditions including changes in shoreline configuration and impacts on developed areas is also recommended. Information on erosion and shoreline changes was used in defining problem areas and evaluating alternative plans.
26. In 1982, the USFWS published the Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, edited by D.F. Boesch. The proceedings provide a current compendium of information on the natural and man-induced causes of land loss, their impacts on natural resources production and man's use of the area, and possible means of reducing land loss.
27. In April 1994, a report entitled Mississippi River and Tributaries - Morganza, Louisiana to the Gulf of Mexico Reconnaissance Report was published by the USACE. The reconnaissance analysis used available data and preliminary field investigations to establish existing conditions, determine the extent of flooding problems, and develop a wide array of alternative solutions. The USACE, the Terrebonne Levee and Conservation District (TLCD), and the public, through the regulatory process, generated numerous flood protection alternatives for a large study area extending from the East Atchafalaya Basin Protection Levee (EABPL) to the western Mississippi River guide levee. The proposals connected existing and permitted forced drainage levees and utilized existing pump stations and flood control structures where possible. In addition, the proposals included new floodgates and water control structures of varying sizes to form a comprehensive system of flood protection, drainage, navigation, and environmental enhancement in Terrebonne Parish. Four flood protection alternatives were determined to be economically feasible and environmentally acceptable. Congress authorized the multipurpose feasibility study in the Energy and Water Development Act of 1995.

28. In January 1996, the Louisiana Barrier Shoreline Feasibility Study was authorized by the CWPPRA Task Force and conducted to assess and quantify wetland loss problems linked to protection provided by barrier formations along the Louisiana coast. The study identified solutions to these problems, attached an estimated cost to these solutions, and determined the barrier configuration that will best protect Louisiana's significant coastal resources from saltwater intrusion, storm surges, wind/wave activity, and oil spills. These resources include, but are not limited to, oil and gas production and exploration facilities, the Strategic Petroleum Reserve, pipelines, navigable waterways, and fragile estuarine and island habitats.
29. In July 2000, the Mississippi River Sediment, Nutrient and Freshwater Redistribution Feasibility Study was conducted under the CWPPRA authority. The purpose of this study was to: (1) determine means to quantify and optimize the available resources of the Mississippi River to create, protect, and increase coastal wetlands and dependent fish and wildlife populations in coastal Louisiana; and (2) to plan, design, evaluate, and recommend for construction projects utilizing the natural resources of the Mississippi River in order to abate continuing measured loss of this habitat and restore a component of wetland growth.
30. The NRCS has published soil surveys on all of the coastal parishes. These provide detailed soils information in addition to uses and limitations of land use as a result of these soils. Cooperative River Basin Studies have also been published by the NRCS. These contain current and historic descriptions of basins and provide detailed management alternatives of hydrologic units within these basins. The published coastal reports include: Lafourche-Terrebonne, 1986; East Central Barataria, 1989; Calcasieu-Sabine, 1994; Mermentau, 1997; Teche-Vermilion, 1999.
31. In October 2003, a preliminary draft reevaluation report and environmental impact statement entitled Mississippi River & Tributaries, Atchafalaya Basin, Louisiana – Lower Atchafalaya Basin Reevaluation (LABR) Study was submitted by the New Orleans District of the U.S. Army Corps of Engineers to the Mississippi Valley Division for review and comment. The recommended plan presented in the LABR preliminary draft reevaluation study would involve continued implementation of the authorized features of the Atchafalaya Basin Floodway System, Louisiana Feasibility Study dated January 1982, with the exception of three features that were no longer necessary. These features are 1) enlargement of the Wax Lake Outlet Overbank Structure, 2) channel training works below Morgan City, and 3) no further implementation of a controlled flow distribution between the Wax Lake Outlet and the Lower Atchafalaya River. Additionally, the draft recommendations include the request for further investigations into the feasibility of replacing the Avoca Island Levee Extension feature with the Levees East of Morgan City feature. This further study will include hydrologic and hydraulic analysis, hydraulic modeling, surveys, fisheries studies, and the necessary environmental studies. The Levees East of Morgan City feature, as presented in the LABR preliminary draft report, will include a lock and pump station (12,000 cfs) at Amelia, LA; a pump station (3,000 cfs) at the Elliot Jones Canal and the appropriate levee and floodwall system. During the development of the LABR preliminary draft report, several

investigations were conducted to determine if a jetty extending from Point Chevreuil into the Gulf of Mexico was required as a mitigation feature of the MR&T project. Through these investigations it was determined that such a feature is not a mitigation feature of the MR&T projects. However, it was determined that such a feature could have sufficient environmental benefits to justify construction. The preliminary draft recommendations included in the LABR study indicate that this feature should be fully investigated under an environmental authority. The LDNR is currently engaged in a preliminary study to examine the engineering feasibility and environmental impacts of constructing this feature. These efforts will be included in future LCA detailed studies.

32. The Atchafalaya River and Bayous Chene, Boeuf, and Black, Louisiana Feasibility Study is currently underway. The study is a multi-purpose study, with emphasis on examining the feasibility of deepening the channel to the Morgan City/Amelia Industrial Area and maximizing coastal restoration and delta development opportunities. The study was initiated in May 2002 and is scheduled for completion in May 2005. This study will examine in detail, different alternatives (including channel diversions) for maximizing the use of river sediments (both dredged and un-dredged) to restore eroding coastal areas in conjunction with providing improvements to the navigation channels. The ecosystem restoration components contained in this study may be included in future LCA detailed studies and implemented as a part of the LCA Plan.

Other Federal projects within the study area include:

33. Old River complex. The Old River complex consists of three structures: the low sill structure, the auxiliary structure, and the overbank structure. The low sill and overbank structures were completed in 1963. The low sill structure was damaged during the 1973 flood. Rehabilitation of the structure was undertaken, but the integrity of the structure to function as designed during future high water events was questionable. Consequently, construction of an auxiliary structure to supplement the low sill structure was completed in 1986. The privately owned Sidney A. Murray, Jr. Hydroelectric Power Station (completed in 1989) is located just upstream of the over bank structure, and pursuant to a certain Memorandum of Agreement, dated December 13, 1989 between the United States of America and the Town of Vidalia and the Catalyst Old River Hydroelectric Limited Partnership, significant portions of the Old River flows are presently being diverted to the Atchafalaya River through the plant for power generation instead of passing through the federal structures. Among other things, daily operation of the Old River complex consists of regulating the low sill structure, the auxiliary structure, and the power station so that of the total flow from the Red and Mississippi Rivers at the latitude of Old River, 30 percent passes down the Atchafalaya River and 70 percent down the Mississippi River on a yearly basis. The overbank structure has been used during high water events. The maximum design capacity for the complex during a project flood is 620,000 cfs. The Old River lock, which allows navigation between the Mississippi and Atchafalaya Rivers, is located approximately 10 miles downstream of the Old River complex.

34. The East Atchafalaya Basin Protection Levee (EABPL). The EABPL begins at the lower end of the Morganza Floodway lower guide levee and extends southward through Morgan City to Avoca Island Cutoff and includes Bayou Sorrel and Bayou Boeuf Locks. The length of this levee is 87.2 miles, including about 17.2 miles of floodwall in the vicinity of Morgan City.
35. West Atchafalaya Floodway. The West Atchafalaya Floodway (the west side artificial intake for the Lower Atchafalaya Basin Floodway) comprises an area of about 170,000 acres. This intake is bounded on the north by the Bayou Des Glaisses fuse-plug levee, on the west by the WABPL, and on the east by the West Bank Atchafalaya River Levee. The lower limit of the West Atchafalaya Floodway is approximately at the latitude of Krotz Springs. The design capacity of the West Atchafalaya Floodway is 250,000 cfs above Bayou Current and 400,000 cfs below Bayou Current. This floodway is used only for the passage of flood flows. To date, the floodway has never been operated.
36. Wax Lake Outlet (WLO). The WLO was constructed to improve the capability of the features of the Atchafalaya Basin Project to pass flood flows to the Gulf of Mexico. This dredged channel, located about 10 miles west of Berwick, extends from Six Mile Lake through the Teche Ridge and Wax Lake into the Atchafalaya Bay, a distance of about 16 miles. The present design capacity of the WLO is 440,000 cfs.
37. Lower Atchafalaya River (LAR). The LAR, the natural outlet for the Lower Atchafalaya Basin Floodway, begins just north of Morgan City and flows southward through the Atchafalaya Bay to the Gulf of Mexico. The present design capacity of the Lower Atchafalaya River is 1,060,000 cfs.

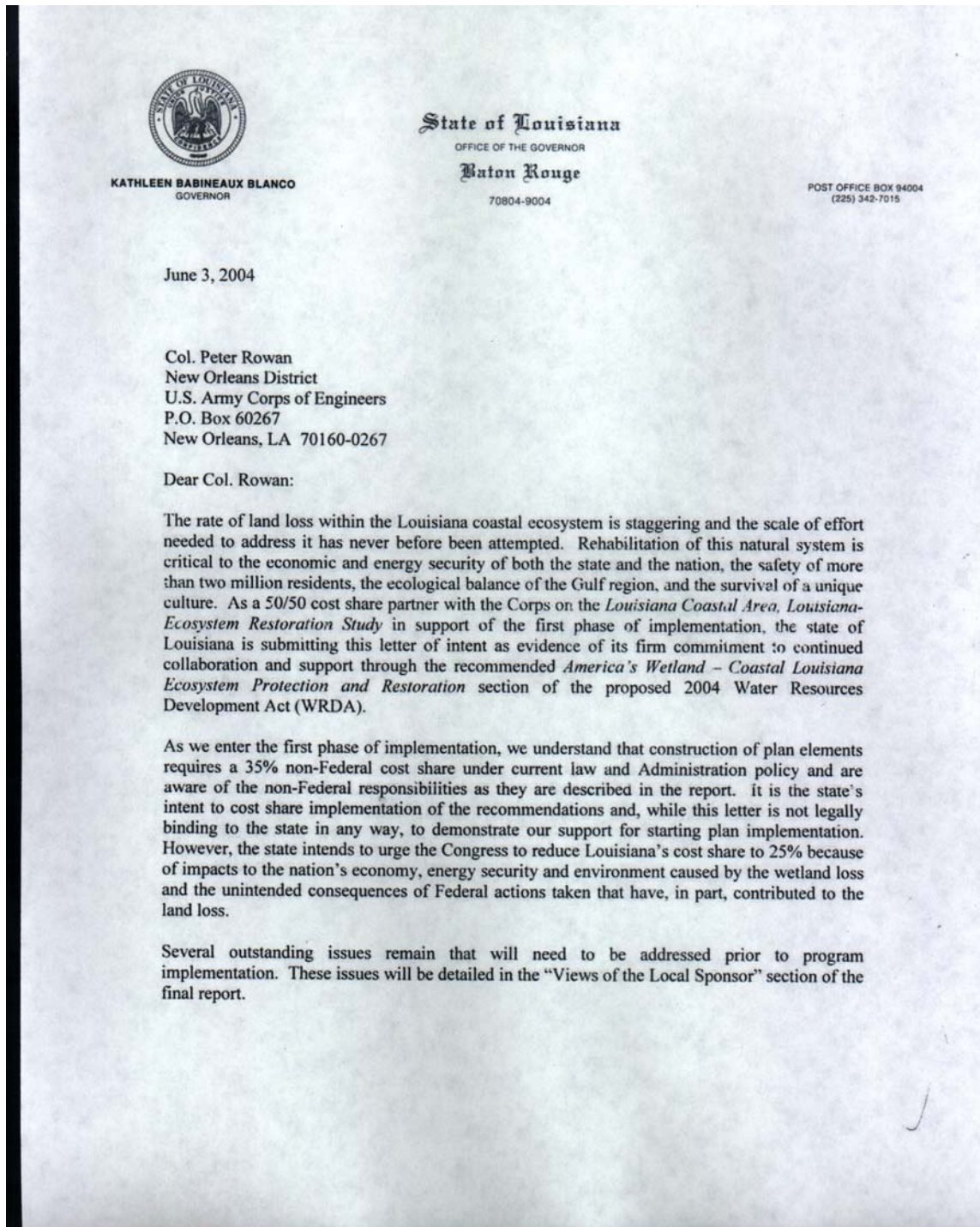
Attachment 3

Non-Federal Sponsor Financial Capability

A breakdown of the Federal and non-Federal cost sharing for the project is displayed in Table MR-24, page MR- 199 of the Main Report. The State of Louisiana has been an active participant throughout the development of the LCA Plan and has reviewed a preliminary draft of the cost-sharing agreement. It has also provided the District with a letter of intent indicating that the State understands the responsibilities incumbent on the non-Federal sponsor. The State intends to enter into a binding agreement with the USACE for each element at the appropriate time. This agreement, called the Project Cost Sharing Agreement (PCA), would include a statement of financial capability and a financing plan, each of which would be prepared by the State and signed by an appropriately authorized state official. The financing plan would specifically identify the source of project funding and the annual revenues generated from this source in order to ensure that sufficient funds are available on a cash-flow basis to meet non-Federal cost-sharing responsibilities for each fiscal year. Also included in the PCA would be a Commander's Assessment of the non-Federal Sponsor's Ability to Cost Share, which would be prepared and signed by the USACE-MVN District Engineer.

Attachment 4

Non-Federal Sponsor Notice of Intent



Col. Rowan
Page 2
June 3, 2004

I would like to express my personal support for continuing this important work. A long-term, comprehensive approach to the sustainable restoration and rehabilitation of our coastal ecosystem is of vital importance to the state of Louisiana and to the nation as a whole. As we embark on this first phase of implementation, I look forward to working with you as we move toward achieving that goal.

Sincerely,

A handwritten signature in dark ink, reading "Kathleen Babineaux Blanco". The signature is fluid and cursive, with the first name "Kathleen" being more prominent.

Kathleen Babineaux Blanco
Governor
State of Louisiana